

REMARKS

Applicants have received and reviewed a final Office Action dated October 25, 2001 in the parent case. By way of response, Applicants have canceled claims 41, 80, and 105 without prejudice and amended claims 31, 40, 44-45, 69-70, 76-77, 79, 81, 83-84, 100-102, 104, 106 and 108. Claims 31-40, 42-79, 81-104, and 106-108 are pending. No new matter is presented. Applicants submit the newly presented claims are supported by the specification.

Claims 44, 69, 76, 77, 81, 83, 100-102, 106, and 108 are amended solely to make their language more formal and not to respond to any rejection.

For the reasons given below, Applicants submit the newly presented claims are in condition for allowance and notification to that effect is earnestly solicited.

Petition for Extension of Time

A two month petition for extension of time is necessary to provide for timeliness of the response. Such an extension is requested, extending the time for response from January 25, 2002 to March 25, 2002.

Rejection of Claims Under Section 112 First Paragraph

The Examiner rejected claims 31, 45, 70, 84, and their dependent claims, plus claims 40, 41, 79, 80, 104, and 105 under 35 U.S.C. § 112 first paragraph. The Examiner objected to certain terms employed in the claims.

The Examiner objected to the term "substantially" in claims 31, 45, 70, 84. These claims have been amended to delete the term "substantially."

The Examiner objected to the general recitation of alkoxylated alcohols in claims 40, 41, 79, 80, 104, and 105. The Examiner suggested that these claims should recite C₁₂-C₁₅ linear alcohol with 7 ethylene oxide units. Claims 41, 80, and 105 have been canceled, which renders this rejection moot for these claims. Claims 40, 79, and 104 have been amended as suggested by the Examiner.

Accordingly, Applicants respectfully submit that the claims fully comply with § 112, first paragraph, and withdrawal of this rejection is respectfully requested.

Objection to Claims

The Examiner objected to claims 44, 69, 83, and 108. The Examiner suggested a correction to the wording of these claims. These claims have been amended to incorporate the correction suggested by the Examiner. Accordingly, Applicants respectfully request withdrawal of this objection.

Rejection of Claims Under Section 103(a)

The Despo and Liu References

The Examiner rejected claims 31-42, 46-67, 70-81, and 84-106 under 35 U.S.C. § 103(a) as obvious over Despo (U.S. Patent No. 5,391,308) in view of Liu (U.S. Patent No. 5,244,589). Applicants respectfully traverse this rejection.

Independent claims 31, 45, 70, and 84 formerly recited that the lubricant is substantially free of fatty acid. Amended independent claims 31, 45, 70, and 84 recite that the lubricant is free of fatty acid. These claims were not amended to respond to the prior art rejections.

The lubricants disclosed in both the Despo and Liu references include fatty acid and depend on the fatty acid as a critical component of the lubricants. Despo teaches a composition that is a "fatty acid lubricant" (column 3, line 10) and a "fatty acid-based lubricant" (column 5, lines 27-28) can contain up to 40% fatty acid. Liu teaches "... COMPOSITIONS INCLUDING A FATTY ACID ..." (Title) and that the fatty acids are required for "superior lubricity" (column 1, lines 17-23). Each of the references cited in the Office Action use the fatty acid as a central component of the lubricant. Therefore, neither of these references discloses or suggests a lubricant that is substantially free of fatty acid or free of fatty acid.

Accordingly, the Despo and Liu references, either alone or in combination, do not teach or suggest the invention of independent claims 31, 45, 70, and 84, and their dependent claims.

Independent claims 50 and 89 recite that phosphate ester and quaternary ammonium antimicrobial agent are present in a particular ratio. The combination of phosphate ester and quaternary ammonium antimicrobial agent provides the unexpected result of increased lubricity (present specification, sentence bridging pages 10 and 11, and Examples). The ratio of these ingredients provides advantageous properties and with respect to sedimentation, precipitation, cloudiness, and deposits (present specification, paragraph of bridging pages 8 and 9, and

Examples). Thus, independent claims 50 and 89 recite both a ratio and ingredients that were selected for stated unexpected and advantageous properties.

Neither the ratio nor the combination of ingredients are recited in the Despo reference. Neither the ratio nor the combination of ingredients are recited in the Liu reference. Neither Despo nor Liu, separately or together, discloses or suggests the unexpected and advantageous properties expected from this combination of ingredients in the ratios recited in the claims.

Further, the Liu reference teaches against employing an anionic lubricant in excess of cationic antimicrobial agent. Specifically, at column 11, line 54, through column 12, line 15, the Liu reference teaches that including anionic materials in a lubricant composition "reduces antimicrobial activity in proportion to the amount" of the anionic material employed. The data tables in this passage indicate that quaternary ammonium antimicrobial agent must be present in excess over anionic components of the lubricant for effective antimicrobial activity.

In the present claims reciting ratios of anionic lubricant to cationic antimicrobial agent, the anionic material is in excess over the cationic antimicrobial agent. The claimed situation is exactly opposite of that taught by the Liu reference. The Liu reference teaches away from the present independent claims reciting ratios.

Therefore, the Despo and Liu references, either alone or in combination, do not disclose or suggest the presently claimed invention.

Accordingly, based on the foregoing differences, is respectfully submitted that the Despo and Liu references cited by the Examiner neither teach nor suggest the presently claimed lubricants and processes, and withdrawal of this rejection is respectfully requested.

The *Person Hei et al.* Reference

The Examiner rejected claims 31-36, 38-42, 45-60, 63-67, 70-75, 77-81, 84-99, and 102-106 under 35 U.S.C. § 103(a) as obvious over Person Hei (U.S. Patent No. 5,723,418) in view of Liu (U.S. Patent No. 5,244,589). Applicants respectfully traverse this rejection.

Person Hei et al. describe a conveyor lubricant composition that includes linear alkyl ether amine compounds which provide lubricity, antimicrobial character, and a reduction in the formation of various precipitates. In addition, the composition includes corrosion inhibitors, detergency agents, an acid source and optional hydrotrope. See *Person Hei et al.* at column 2,

line 60 through column 3, line 2. According to *Person Hei et al.*, the amine compound functions as the antimicrobial agent. See *Person Hei et al.* at column 3, lines 5-48. These compositions are based on the alkyl ether amine for lubricity and antimicrobial character.

In contrast, the present independent claims relate to a composition that employs a combination of alkyl alkoxyated phosphate ester together with linear quaternary ammonium antimicrobial agent for lubricity. This combination of phosphate ester and quaternary ammonium antimicrobial agent provides the unexpected result of increased lubricity (present specification, sentence bridging pages 10 and 11, and Examples). The ratio of these ingredients provides advantageous properties and with respect to sedimentation, precipitation, cloudiness, and deposits (present specification, paragraph of bridging pages 8 and 9, and Examples). Neither this unexpected result nor this advantageous property is disclosed or suggested by the *Person Hei* reference alone or in combination with the *Liu* reference.

It is recognized that *Person Hei et al.* mention quaternary ammonium compounds as types of cationic surfactants at column 5, lines 18-25. *Person Hei et al.*, however, fail to suggest using quaternary ammonium compounds as antimicrobial agents according to the present invention. According to *Person Hei et al.* at column 3, lines 4-48, the alkyl ether amine compounds are provided for antimicrobial properties. Although *Person Hei et al.* mention quaternary ammonium compounds as a type of cationic surfactant, *Person Hei et al.* fail to disclose how much quaternary ammonium compound should be used to provide antimicrobial properties or that this compound would unexpectedly increase lubricity.

In view of the above comments, it is submitted that the presently claimed invention would not have been suggested by *Person Hei et al.* either alone or in combination with the *Liu* reference. Accordingly, withdrawal of this rejection is requested.

Summary

In summary, each of claims 31-40, 42-79, 81-104, and 106-108 are in condition for allowance, and notification to that effect is earnestly solicited. The Examiner is invited to contact Applicants undersigned representative if the Examiner believes that doing so will advance prosecution of this application.

Respectfully submitted,

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Date:

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MARKED-UP VERSION TO SHOW CHANGES MADE

31. (Amended) An antimicrobial phosphate ester conveyor lubricant comprising alkyl alkoxyated phosphate ester, linear quaternary ammonium antimicrobial agent, and water; wherein the antimicrobial phosphate ester conveyor lubricant is [substantially] free of fatty acid.

40. (Amended) The lubricant of claim 31, further comprising alcohol [alkoxylate] ethoxylate comprising a C₁₂-C₁₅ linear alcohol with 7 ethylene oxide units.

44. (Amended) The lubricant of claim 42, comprising alkyl alkoxyated phosphate ester comprising an alkyl group of 10 to 12 carbon atoms and an alkoxy moiety of 5 ethylene oxide units, phenol ethoxylated phosphate ester, didecyl dimethyl ammonium chloride, and water; and further comprising EDTA, [alkalating] alkylating agent, and C₁₂₋₁₅ linear alcohol ethoxylated with 7 ethylene oxide units.

45. (Amended) An antimicrobial phosphate ester conveyor lubricant comprising alkyl alkoxyated phosphate ester, aryl alkoxyated phosphate ester, quaternary ammonium antimicrobial agent, and water; wherein the antimicrobial phosphate ester conveyor lubricant is [substantially] free of fatty acid.

69. (Amended) The lubricant of claim 67, comprising alkyl alkoxyated phosphate ester comprising an alkyl group of 10 to 12 carbon atoms and an alkoxy moiety of 5 ethylene oxide units, phenol ethoxylated phosphate ester, didecyl dimethyl ammonium chloride, and water; and further comprising EDTA, [alkalating] alkylating agent, and C₁₂₋₁₅ linear alcohol ethoxylated with 7 ethylene oxide units.

70. (Amended) A process for lubricating a conveyor used to transport containers, the process comprising applying a phosphate ester antimicrobial lubricant composition to the conveying surface of a conveyor and moving containers on the conveyor;
the lubricant comprising alkyl alkoxyated phosphate ester, linear quaternary ammonium antimicrobial agent, and water;
wherein the antimicrobial phosphate ester conveyor lubricant is [substantially] free of fatty acid.

76. (Amended) The process of claim 70, wherein the lubricant composition further comprises [comprising] sodium hydroxide.

77. (Amended) The process of claim 70, wherein the lubricant composition further comprises [comprising a] chelating agent for divalent cations.

79. (Amended) The process of claim 70, wherein the lubricant composition further [comprising] comprises alcohol [alkoxylate] ethoxylate comprising a C₁₂-C₁₅ linear alcohol with 7 ethylene oxide units.

81. (Amended) The process of claim 70, wherein the lubricant composition further comprises [comprising] aryl alkoxyated phosphate ester.

83. (Amended) The process of claim 81, wherein the lubricant composition comprises [comprising] alkyl alkoxyated phosphate ester comprising an alkyl group of 10 to 12 carbon atoms and an alkoxy moiety of 5 ethylene oxide units, phenol ethoxylated phosphate ester, didecyl dimethyl ammonium chloride, and water; and further comprising EDTA, [alkalating] alkylating agent, and C₁₂₋₁₅ linear alcohol ethoxylated with 7 ethylene oxide units.

84. (Amended) A process for lubricating a conveyor used to transport containers, the process comprising applying a phosphate ester antimicrobial lubricant composition to the conveying surface of a conveyor and moving containers on the conveyor;

the lubricant comprising alkyl alkoxylated phosphate ester, aryl alkoxylated phosphate ester, quaternary ammonium antimicrobial agent, and water;

wherein the antimicrobial phosphate ester conveyor lubricant is [substantially] free of fatty acid.

100. (Amended) The process of claim 89, wherein the lubricant composition further comprises [comprising] alkali metal hydroxide or ammonium salt.

101. (Amended) The process of claim 100, wherein the lubricant composition comprises [comprising] sodium hydroxide.

102. (Amended) The process of claim 89, wherein the lubricant composition further comprises [comprising] chelating agent for divalent cations.

104. (Amended) The process of claim 89, wherein the lubricant composition further [comprising] comprises alcohol [alkoxylate] ethoxylate comprising a C₁₂-C₁₅ linear alcohol with 7 ethylene oxide units.

106. (Amended) The process of claim 89, wherein the lubricant composition further comprises [comprising] aryl alkoxylated phosphate ester.

108. (Amended) The process of claim 106, wherein the lubricant composition comprises [comprising] alkyl alkoxylated phosphate ester comprising an alkyl group of 10 to 12 carbon atoms and an alkoxy moiety of 5 ethylene oxide units, phenol ethoxylated phosphate ester, didecyl dimethyl ammonium chloride, and water; and further comprising EDTA, [alkalating] alkylating agent, and C₁₂₋₁₅ linear alcohol ethoxylated with 7 ethylene oxide units.